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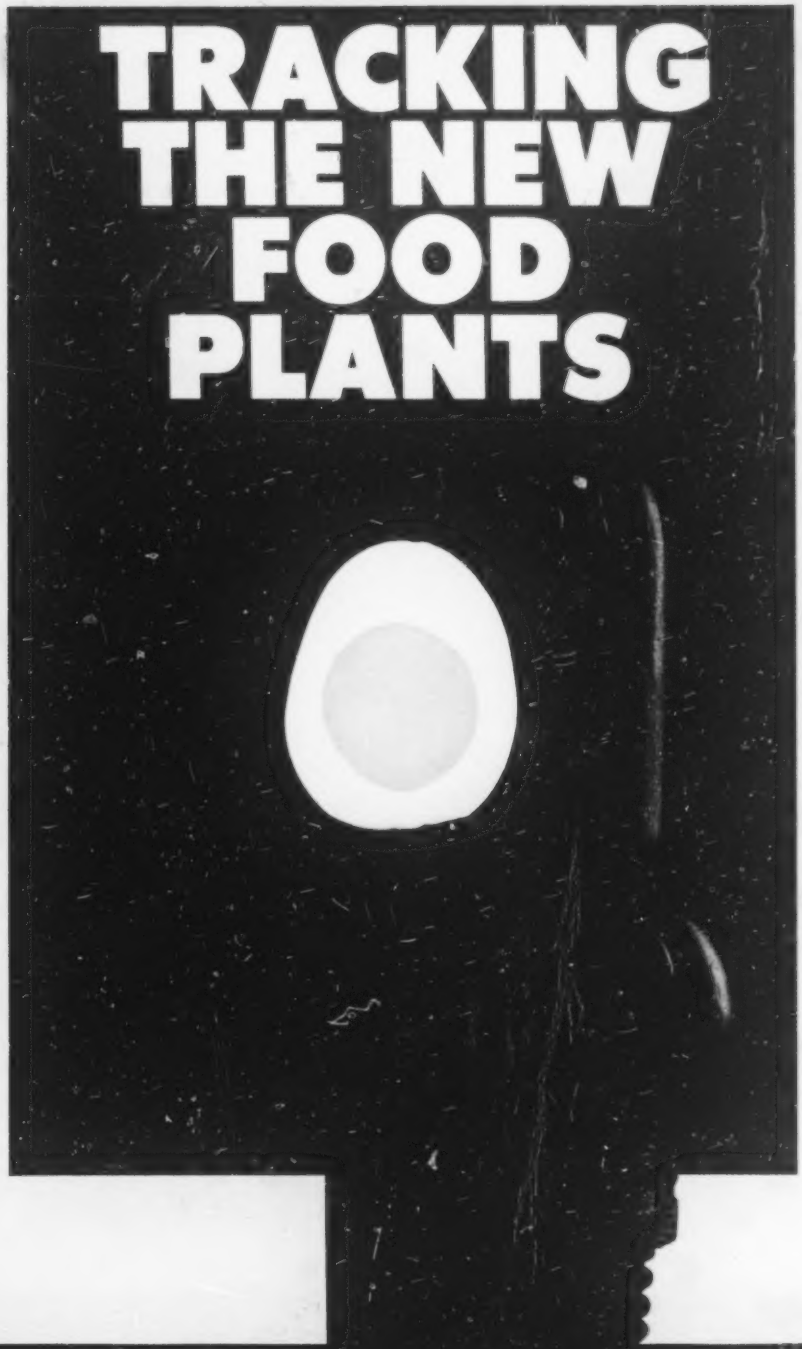
SEPTEMBER 1985

Chilton's Food Engineering

In this issue: ENGINEERED FOODS

TRACKING THE NEW FOOD PLANTS



Who's Building What, Where

FE surveys the action in start-ups, expansions. Who's betting big on the future?

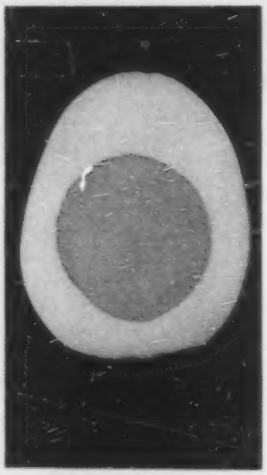
Aseptic Dominates DFISA Show

8 of the 10 largest booths will feature either aseptic processing or packaging.

IFT Review... Part II

Continuing show coverage of sweeteners, gums, vegetable proteins, sodium, etc.

Chilton's Food Engineering



ABOUT THE COVER

Food Engineering's eighth annual New Plant Survey discloses new or expanded food plants planned, being built or completed during 1985.

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Special focus is given to Quality Control equipment in this month's new product section.
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LOOKING AHEAD . . .
by Dr. A. Elizabeth Sloan

Chemical Confusion

Several key executives in the food industry have told me that, in their opinion, consumers are no longer concerned about food chemicals. These industry leaders feel that consumers have become so preoccupied with "nutrition" concerns, such as the sodium, cholesterol and calcium content, that they have lost interest in the food-chemical issue.

This perception of the consumer attitude toward food chemicals is *wrong*. In fact, numerous *Good Housekeeping* studies show the opposite to be true: Consumers are now more concerned about chemicals in food than with nutrition issues, and they want the industry to find alternatives to chemical use.

In May of last year, we questioned women about their degree of concern with 15 food-related areas. Fully 76% said they are "extremely concerned" to "very concerned" about the chemicals in food, and another 20% said they are "somewhat concerned."

A much higher percentage of the participants expressed a high-to-extreme concern about food chemicals than about the sugar content of food (65%), sodium content (59%), caffeine content (51.5%), and even calorie content (60.5%). In fact, the food-chemical issue ranked fourth in importance, after "freshness dating on food packages," "the price of food," and "the nutritional value of food."

This year when we asked consumers to name their major food concerns, "avoiding harmful additives/preservatives/chemicals" moved to the *top* of their list, preceding freshness of foods, sodium content, sugar content, calorie count, and even "high food prices."

Yes to no's

Today's consumers want high-quality food products, and they feel that the *absence* of chemicals in a product improves quality while the *presence* of chemicals lowers it.

We asked consumers to rate seventy-five phrases commonly found on food packages having a positive or negative effect on their decision to buy the products. On a scale of +3 to -3, they rated the labels "no artificial preservatives," "no artificial ingredients," and "no artificial coloring" as being *positive* influences on their decision to buy a product (+1.91, +1.89, +1.88 and +1.85, respectively), and they rated the labels "a preservative to ensure freshness," "artificial color," and "artificial flavor," as being *negative* influences (-.23, -1.27, and -1.41, respectively).

Consumers believe that the presence of chemicals in a food product detracts from its quality because they think that "natural" is more nutritious and tastes better. When we asked women to agree or disagree with 12 statements about "natural" food, we discovered that 71.5% agreed with the statement, "natural foods are always better for you than processed foods," 68.5% agreed that "natural foods are more nutritious than other foods," and 63% agreed that "organically grown foods are better for you than foods grown with synthetic fertilizer and pesticides."

More than three-fourths of the consumers said that artificial flavoring has a poorer taste than natural flavoring. Their descriptions of artificial flavoring ranged from too salty to too sweet, from strong-tasting to flat-tasting, from bitter to greasy. Although they didn't agree on what is wrong with the taste of artificial flavoring, the consensus was that "natural flavorings are of better quality."

Consumers use labels

The majority of consumers are using labels to avoid buying products that contain chemicals. When we asked consumers how often they use information about chemical additives on labels in making purchasing decisions, 34% said they always use such information, 37% said they frequently use it, and 19.5% said they occasionally use it. Eighty percent rated information about chemical additives on food labels as being important. And from 60 to 66% of our respondents said they try to avoid buying foods that contain preservatives, artificial flavors, and artificial colors.

Although the majority of consumers say that they are trying to avoid foods containing chemicals, they are still purchasing these foods. In one study, 87% of the participants disagreed with the statement, "I never buy any foods that contain artificial ingredients." However, 48.5% of this group say they *worry* about using food with artificial ingredients.

Consumers are still purchasing foods containing chemicals because they are willing to trade off the absence of chemicals for the benefits those chemicals provide. Our research indicates, however, that this attitude may be changing.

We asked women the following question: "When buying chewy cookies, would you prefer those with preservatives that keep them chewy and fresh-tasting or those without preservatives even though the cookies would become somewhat hard?" A surprising 54.5% said they would prefer the cookies with no preservatives even though the cookies would become somewhat hard.

We asked this same group about the use of artificial ingredients in diet foods and beverages. Of the 65% who said that

CONSUMER CONCERNS

Consumers are still concerned about chemicals in foods and beverages, according to Good Housekeeping Institute survey findings. They want industry to find alternatives.

High to extreme concern:

Chemical content	76.0%
Sugar content	65.5%
Sodium content	59.0%
Caffeine content	51.5%
Calorie content	60.5%

Major concern for:

Chemical preservatives	75%
Electromagnetic energy/ionized	41%
Irradiation	19%

they buy diet products, only 15% said, "The weight loss is more important to me than the additives." Another 31.5% said, "I worry about the additives but buy (the products) anyway." These dieters are "on the fence." Right now they are willing to accept the presence of chemicals in diet products to have the benefit of reduced calories, but they *worry* about the additives. If a line of diet products without chemicals were introduced—products comparable in price and quality to diet products that contain chemicals—dieters probably would switch to the new line.

Some consumers are even willing to trade a lower price for the "higher quality" of a product without chemicals. Forty-four percent of one survey group agreed with the statement, "I am willing to pay up to 10% more for a food that is natural," and 11.5% were undecided.

One of our most significant findings has been that consumers are now so concerned about chemical preservatives that they are willing to consider any alternative to their use. When we asked consumers if they preferred chemicals or irradiation as a means to preserve food, 44% said they don't know enough to judge, 27% said they don't want either method, a surprising 23% said they prefer irradiation, and only 3% said they prefer preservatives! The majority of respondents in all the groups except the one preferring preservatives expressed strong feelings against the use of chemicals. Typical comments were: "Preservatives are harmful/unsafe/carcinogenic," "I don't like chemicals/additives in anything," and "I don't know what irradiation is, but I don't like preservatives."

In this same survey, three-fourths of the woman said that "foods grown using chemical sprays" and "foods with chemical preservatives" are major concerns to them. In contrast, 41% said that "foods treated with electromagnetic energy/ionized" is a major concern to them, and only 19% said that "foods irradiated to prevent spoilage" is a major concern. Clearly, consumers fear chemicals far more than they fear new processes about which they know very little!

Why do consumers have such a strong fear of chemicals? Primarily it is because they equate chemicals with cancer. Eighty-two percent of the participants in one of our surveys agreed with the statement, "Chemicals can cause cancer." When we asked the members of another survey group about their fear of illness from artificial ingredients, 55% said they fear possible cancer.

Another 26% of this group said that they fear a possible allergic reaction from chemicals. One-third said that they have a "serious" concern about food allergies, and 22% claimed that they avoid certain foods on the mere possibility that they contain an allergen.

Consumers are frightened by even the smallest amount of a "problem" ingredient in a food. In response to the question, "If an ingredient is feared, does the smallness of the amount help to reduce the fear?" almost half of the participants answered, "No. I fear even the smallest quantity," and 22.5% weren't sure.

Part of the problem is that many consumers connect food chemicals with *all* chemicals, and, therefore, food chemicals suffer "guilt by association." Fifty-five percent of our respondents admitted that they think there is a connection between chemical spills and toxic waste and their feelings about chemicals in foods, and another 13% said they aren't sure.

When asked if chemicals are ever good for us, 19% said no, and a surprising 43% said they don't know.

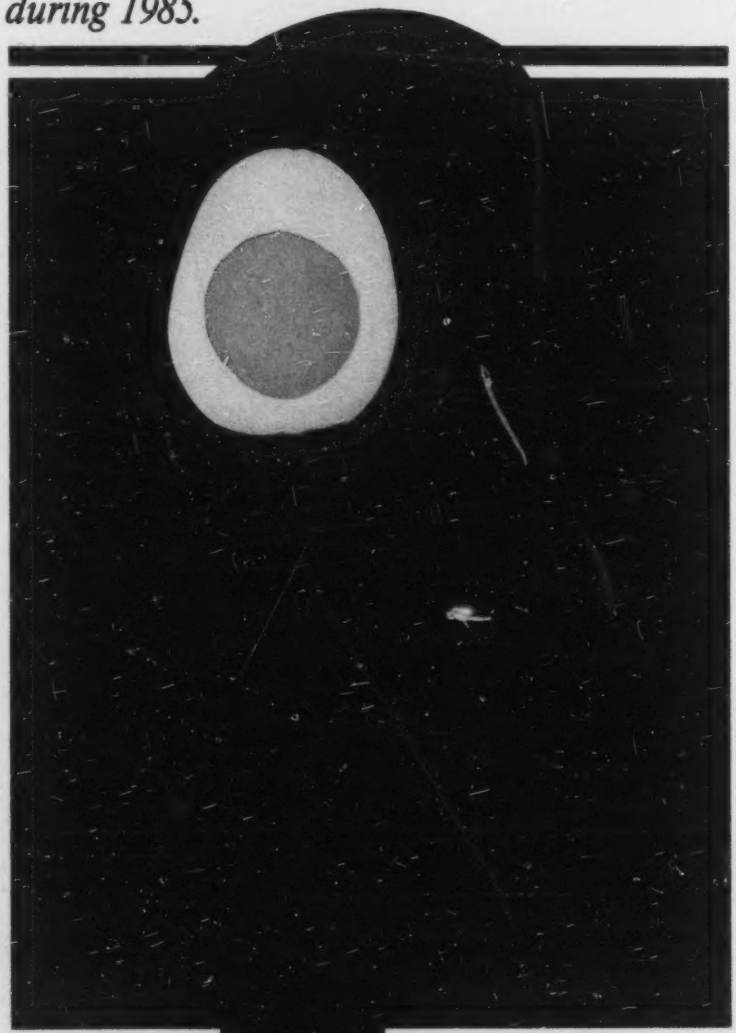
We asked consumers, "If you were able to talk to the food technologists who work at the major food companies developing new food products, what message would you want to give them?" The first message on our consumers' list of advice was this: Use fewer chemicals or *no* chemicals in our food! Three-fourths of our respondents gave such advice as, "Add nutrients/vitamins but not chemicals,"and "Develop a way to have fresh foods without preservatives."

Technologists would be wise to heed this advice. The food-chemical issue has not "cooled off." On the contrary, it has become—and will continue to be—one of the major food concerns of our time.

Dr. Sloan is Director of the Good Housekeeping Institute, the major editorial service and technical division of Good Housekeeping magazine.

TRACKING THE NEW FOOD PLANTS

Food Engineering's eighth annual New Plant Survey discloses new or expanded food plants planned, being built or completed during 1985.



Food Engineering's eighth annual survey of new food plants—compiled from studies conducted by *Food Engineering* and Conway Data, Inc. (Atlanta)—totals 295 new and expanded food plants completed, under construction or planned during 1985. This compares to 201 in 1984, 193 in 1983 and 174 in 1982.

Probable reason for this year's surge in spending for new construction: Falling interest rates. During the past year, the prime rate plunged a full 3.5 percent—from 13 percent on July 31, 1984 to 9.5 percent on July 31,1985.

Due to space limitations, only 210 of the 295 plants are listed on the following pages. Deleted from this year's listing are: 1.) Warehouses and distribution centers; 2.) Feed and pet-food plants; 3.) Rendering plants; 4.) Projects where primary product was unreported; 5.) All projects where estimated costs are known to be less than $1 million.

Half—106 of the 210 plants listed—are expansions rather than new construction.

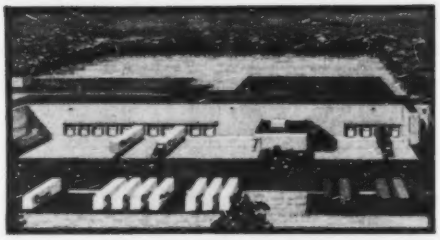
A brief study of the following pages confirms current food-industry trends:

- Low-fat/low-cholesterol: No less than 10 percent—or 21 of the 210 plants listed—are poultry processing plants.
- The shift to the Sun Belt: This year, 31 percent—65 of the 210 plants listed (93 of the 295 plants in the complete survey)—are concentrated in the 11 states which once comprised the Confederacy.
- Beer wars: Anheuser-Busch's dominant share-of-market continues to rise, reflected in the fact that—while a new Miller brewery stands idle at Trenton, Ohio—Anheuser-Busch is expanding or renovating seven plants and building a new one at Fort Collins, Colo., right in Coors' backyard. Apart from Budweiser, only regional brewers such as Hudepohl in Cincinnati, Brick and Carling O'Keefe in Canada are building new facilities.
- Cola wars: Coca-Cola bottlers are building or expanding nine plants (six are listed); Pepsi bottlers are building or expanding 11 facilities (nine are shown). Growing soft-drink consumption and the recent shift to 100-percent HFCS are shown in expanded production by Staley, Cargill and CPC International.

In the following tables, "status and date" refer to project status and the date that status was reported. "Planned" means site has been selected but construction not yet underway on the date reported. "Construction" means building was in progress on the date shown. "Completed" is self-explanatory. Some startup dates are listed. Where status of a project is unknown, it is simply shown as "Reported."

CHARLES E. MORRIS
Midwest Editor

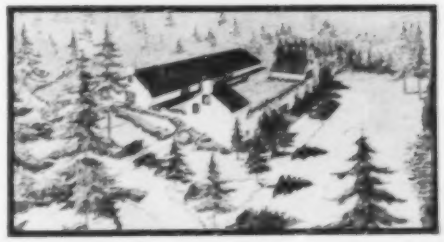
NEW FOOD PLANTS



New 108,000 sq. ft. Atlantic Food Services fresh fish and poultry distribution center in Prince William County, Va., will appear as shown at start-up in Sept. 1986.

Company	Plant Location	Primary Product	Square Feet/Cap.	Est. Cost ($-Millions)	Employ-ees	Architects Engineers	Status & Date
A							
A.E. Staley Mfg. Co.	Lafayette, Ind.	Corn syrups	Expansion	19.0	4	--	Construction 1/85
A.E. Staley Mfg. Co.	Louden, Tenn.	HFCS & ethanol	Expansion	--	--	PSI	Completed 4/85
All-Amer. Gourmet	Atlanta, Ga.	Frozen foods	--	14.5	300	--	Construction 6/85
Amalgamaize Co.	Decatur, Ala.	HFCS	Expansion	15.0	15	--	Construction 1/84
Amick Poultry Co.	Muscogee Cty,Ga.	Processed poultry	Expansion	--	50	--	Completed 10/84
Anderson-Clayton	Woburn, Mass.	Edible oils, prepared food	--	1.0	--	--	Planning 5/85
Andrew Wolf Wine	Stoney Plain, Alb.	Wine	12,000	2.0	15	--	Construction 12/84
Anheuser-Busch Co.	Los Angeles, Calif.	Beer	Renovation	--	--	MK-Ferguson	Continuing
Anheuser-Busch Co.	Fort Collins, Colo.	Beer	--	400	550	MK-Ferguson	Eng. thru '85
Anheuser-Busch Co.	Jacksonville, Fla.	Beer	Renovation	--	--	MK-Ferguson	Completion '86
Anheuser-Busch Co.	St. Louis, Mo.	Beer	Renovation	--	--	MK-Ferguson	Completion late '86
Anheuser-Busch Co.	Merrimack, N.H.	Beer	Renovation	--	--	MK-Ferguson	--
Anheuser-Busch Co.	Newark, N.J.	Beer	Renovation	100	400	Sverdrup	Construction 5/85
Anheuser-Busch Co.	Houston, Tex.	Beer	550,000	100.0	440	MK-Ferguson	Completion late '85
Anheuser-Busch Co.	Williamsburg, Va.	Beer	Renovation	--	--	MK-Ferguson	Completion '86
Associated Dairies	Boise, Idaho	Ice cream	--	2.2	10	DESCORP	Startup 12/85
Astro Dairy Prod.	Amsterdam, N.Y.	Yogurt, sour cream	--	3.0	50	--	Planning 5/85
Atlantic Food Serv.	Prince Wm. Cty.Va.	Fresh fish & poultry	108,000	--	100	St. Onge Ruff	Startup 9/86
Auten Poultry Co.	Muscogee Cty., Ga.	Poultry products	--	--	5	--	Planning 12/84
B							
Banquet Foods	Turlock, Calif.	Frozen dinners	Expansion	2.5	600	--	Planning 5/85
Banquet Foods	Macon Cty, Mo.	Boneless chicken	25,000	4.0	139	--	Construction 12/84
Bay Springs Foods	Bay Springs, Miss.	Processed chicken	--	--	75	--	Construction 4/85
Beatrice Foods	Nashville, Tenn.	Dairy products	--	--	--	--	Planning 1/85
Bev-Pak, Inc.	Scotia, N.Y.	Soft drinks	Expansion	8.0	50	--	Planning 4/85
Black Hills Packing	Pennington Cty.,S.D.	Meat products	Expansion	--	20	--	Completed 7/84
Bloch Guggenheimer	Hurlock, Md.	Pickles	144,000	9.0	400	--	Planning 4/85
Borden, Inc.	Houston, Tex.	Ice cream	92,000	30.0	160	--	Planning 10/84
Brick Brewery	Waterloo, Ont.	Beer	35,000	2.0	--	--	Planning 12/84
Brown & Haley Co.	Tacoma, Wash.	Confections	7,000(Expansion)	--	68	--	Construction 12/84
Buffalo Rock Co.	Birmingham, Ala.	Soft drinks	86,000	3	500	--	Construction 3/85
C							
Cal-Co Frozen Foods	Europa, Miss.	Frozen vegetables		6.0			Construction 4/85

NEW FOOD PLANTS



Gabled, campus-type buildings of new Country Epicure bakery, designed and built by St. Onge Ruff & Associates in West Chester County, NY., complement the adjacent residential neighborhood. Start-up is planned for summer, 1986.

Company	Plant Location	Primary Product	Square Feet/Cap.	Est. Cost ($-Millions)	Employees	Architects Engineers	Status & Date
Campbell Soup Co.	Sumter, SC	Frozen foods	Expansion	--	200	--	Completed 10/84
Camsco Produce Co.	Osceola, Iowa	Mushrooms	--	--	200	--	Planning 12/84
Capital Resources	Marshall Cty., Iowa	Meat packing	--	--	100	--	Completed 1/85
Cargill Inc.	Eddyville, Iowa	HFCS, corn syrups, starch	800 mil.lbs.syrup & 150 mil.lbs. starch/yr.	100.0	--	PSI	Startup early '85
Cargill, Inc.	Sioux City, Iowa	Soybean oil	Expansion	16.0	15	--	Construction 1/85
Cargill, Inc.	Woodbury Cty., Iowa	Soybean oil	--	15.0	29	--	Planning 12/84
Carling O'Keefe	Calgary, Alb.	Beer	9,000(Expansion)	1.3	120	--	Reported 4/85
Carolina Turkeys	Duplin Cty., N.C.	Turkey products	220,000	25.0	600	Hughes, Schillington Dixon	Startup 6/86
Capt. Crab Seafood	Leon Cty., Fla.	Seafood	40,000	1.5	75	--	Reported 12/84
Central Soya Co.	Chattanooga, Tenn.	Soybean meal	Expansion	--	--	--	Reported 1/85
Charles Freihofer	Albany Cty., N.Y.	Bakery products	86,000	10	--	--	Planning 12/84
Chase & Sanborn	New Orleans, La.	Coffee	Expansion	2.9	25	--	Reported 5/85
Chateau Elan	Braselton, Ga.	Wine	--	--	50	--	Completed 1/85
C.J. Vitner Co.	Chicago, Ill.	Potato chips, popcorn	9,000(Expansion)	--	--	--	Completed 3/85
Coca-Cola Bottling	Middlesboro, Ky.	Soft drinks	Expansion	1.0	50	--	Completed 1/85
Coca-Cola Bottling	Rapid City, S.D.	Soft drinks	30,000	--	--	--	Construction 1/85
Coca-Cola Bottling	Roanoke, Va.	Soft drinks	Expansion	14.5	--	--	Construction 4/85
Coca-Cola Foods Co.	Bristol, Pa.	Orange juice, fruit drinks	165,000	6-7	--	Ballinger	Startup autumn '86
Columbia Foods Co.	Boone Cty, Mo.	Frankfurters	56,000	--	110	--	Construction 12/84
Concordia Meat Co.	Lafayette City, Mo.	Beef, pork, turkey prod.	10,000	--	85	--	Construction 12/84
Consolidated Flavor	St. Louis, Mo.	Cocoa	29,000	--	--	--	Planning 8/84
Country Epicure	Westchester Cty ,NY	Frozen bakery desserts	52,000	4	160	St. Onge Ruff	Startup mid-'86
CPC International	Argo, Ill.	Corn syrups, starch	Renovation	300.0	--	--	Startup 6/85
C. Ramirez & Sons	Tulia, Tex.	Tortillas, taco shells	21,000	1.3	80	--	Completed 1/85
Cuisine des Chef	Orange Cty., Fla.	Food-service products	12,000	--	40	--	Completed 12/84
Cuddy Foods Co.	Monroe, N.C.	Turkey products	Expansion	2.0	--	--	Construction 4/85
Cumberland Gap	Middlesboro, Ky.	Meat processing	Expansion	2.3	50	--	Completed 4/85

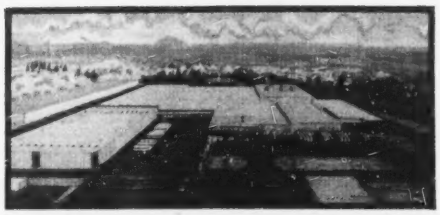
D

Dairymen, Inc.	Atlanta, Ga.	Milk	Renovation	3.0	--	Sverdrup	Completion '87
Dairymen, Inc.	Wilkesboro, N.C.	Milk	Expansion	--	--	Hixson	Completion 9/85
Dakota Crackin'Inc.	Devil's Lake, N.D.	Eggs	--	10.4	179	--	Completed 3/85
Dalbyco Meat Pkrs.	Grundy Cty., Mo.	Breakfast steak, ham	--	--	60	--	Completed 12/84
Delicious Foods Co.	Hall, Neb.	Frozen foods	60,000(Exp)	4.5	210	--	Planning 12/84
DeRosa Pasta Co.	Wahoo, Neb.	Pasta	--	--	--	--	Planning 4/85
Dillon's Bakery	Hutchinson, Kan.	Bread, pastry	102,000(Exp.)	6.0	--	--	Completed 1/85
Domino Pizza	San Bernardino,Calif	Pizza dough, ingredients	45,000	1.6	100	--	Construction 12/84
Domino Pizza	DuPage City, Ill.	Pizza	29,000	--	40	--	Completed 12/84

NEW FOOD PLANTS

Company	Plant Location	Primary Product	Square Feet/Cap.	Est. Cost ($-Millions)	Employees	Architects Engineers	Status & Date
Dothan Oil Mills	Dothan, Ala.	Peanut oil	Expansion	5.4	--	--	Reported 1/85
Dothan Oil Mills	Headland, Ala.	Shelled peanuts	Expansion	1.8	--	--	Reported 10/85
Dunkirk Ice Cream	Dunkirk, N.Y.	Ice cream	Expansion	7.7	115	--	Construction 5/85
E							
E.A. Miller & Sons	Hyrum, Utah	Meat packing	Expansion	10.0	80	--	Reported 1/85
Eastern Block Co.	Henderson, N.C.	Nutrients	20,000	2.0	30	--	Completed 1/85
Eau Galle Cheese	Eau Galle, Wis.	Cheese	--	1.1	--	--	Planning 5/85
Edy's Ice Cream Co.	Fort Wayne, Ind.	Ice cream	--	8.5	90	--	Planning 4/85
Eileen Gilday, Inc.	Pittsburgh, Pa.	Irish taffy	40,000	1.5	35	Siebert Eng.	Startup 3/86
Energos Co.	Phoenix, Ariz.	Energy drinks	44,000	--	--	--	Completed 12/84
Enzyme Biosystems	Beloit, Wis.	Enzymes	30,000	--	--	--	Startup 2/85
Erie Casein Co.	Rochelle, Ill.	Milk proteins	--	--	--	--	Startup 6/85
F							
Fanny Farmer Candy	Norwalk, Ohio	Boxed chocolates	90,000	1.0	350	Siebert Eng.	Startup 12/85
Fast Food Merch.	Monterey, Tenn.	Processed meats	Expansion	--	--	--	Reported 1/85
Ferrara Pan Candy	Forest Park, Ill.	Candy	20,000	--	120	Siebert Eng.	Startup 7/85
Flav-O-Rich Co.	London, Ky.	Milk, ice cream	Expansion	3.0	--	--	Completed 1/85
Flowers Baking Co.	Opelika, Ala.	Rolls	Expansion	4.0	--	--	Reported 10/84
FMC Corp.	New Castle, Del.	Ingredients	11,000	2.0	10	--	Planning 1/85
Folger Coffee Co.	New Orleans, La.	Coffee	Expansion	1.6	--	--	Completed 1/85
Four-R Poultry Serv	Barry Cty, Mo.	Boneless chicken	13,000	--	80	--	Completed 1/85
Frick Meat Packing	Audrain Cty, Mo.	Processed hams	24,000	1.5	25	--	Completed 12/84
Frigo Cheese Co.	Lena, Wis.	Cheese	Expansion	3.0	--	--	Construction 6/85
G							
General Foods Corp.	Houston, Tex.	Coffee	Expansion	--	--	--	Reported 1/85
General Mills Corp.	Buffalo, NY	Cereals	Renovation	40.0	500	E&V, Inc.	Reported 5/85
Genseng-UP Corp.	Port Jervis, NY	Soft drinks	--	3.0	30	--	Planning 3/85
George A. Hormel	Fremont, Neb.	Meat products	Expansion	3.4	--	--	Construction 5/85
George A. Hormel	Kossuth, Iowa	Processed meats	36,000(Expansion)	--	50	--	Reported 1/85
Grand Mstrs. Winery	Halifax, N.S.	Wine bottling	--	2.0	--	--	Planning 6/85
Guernsey Dell, Inc.	Chicago, Ill.	Ice cream ingredients	70,000	--	125	Siebert Eng.	Startup 12/85

NEW FOOD PLANTS

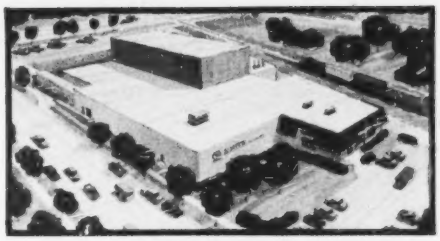


Hannaford Bros. grocery distribution center at South Portland, Me., was expanded in spring, 1985 by one-third to 453,000 square feet. St. Onge Ruff planned and engineered the project.

Company	Plant Location	Primary Product	Square Feet/Cap.	Est. Cost ($-Millions)	Employees	Architects Engineers	Status & Date
H							
Harry Laws & Co.	Brusly, La.	Raw sugar	Expansion	1.4	--	--	Completed 4/85
Herman Goelitz Co.	Fairfield, Calif.	Candy	--	--	95	--	Construction 7/85
Heying Foods, Inc.	Guthrie Cty, Iowa	Processed egg products	--	2.3	60	--	Planning 12/84
Holly Farms Poultry	Monroe, N.C.	Processed poultry	Expansion	4.9	125	--	Planning 4/85
Holly Farms Poultry	Wilkesboro, N.C.	Processed poultry	250,000(Expansion)	6.0	50	--	Construction 1/85
Howard Beef Proc.	Miner Cty., S.D.	Meat packing	6,000(expansion)	--	50	--	Completed 10/84
Hudepohl Brewing	Cincinnati, Ohio	Draft beer	--	7.0	--	--	Construction 5/85
Hudson Foods Co.	Hope, Ark.	Processed poultry	Expansion	2.6	75	--	Planning 6/85
Hyplains Dress.Beef	Dodge City, Kan.	Processed meats	Expansion	2.7	--	--	Completed 1/85
I							
Idle Wild Farm	Pomfret, Conn.	Frozen foods	50,000	--	340	--	Planning 1/85
Inglenook/Napa Vlly	Oakville, N.Y.	Wine	Expansion	6.0	--	--	Planning 5/85
Inglenook Vineyard	Rutterford, Calif.	Wine	12,300(Expansion)	--	--	Armco Atlantic	Completed 5/85
Int. Multifoods	San Benito, Tex.	Meat processing	30,000	2.9	50	--	Completed 2/85
Iowa Beverage Mfrs.	Wapello Cty, Iowa	Carbonated beverages	30,000	--	30	--	Reported 4/85
Iowa Pork Co.	Davis City, S.D.	Pork processing	20,000	2.0	50	--	Completed 12/84
Isaly Co./Klondike	San Bernardino,Calif	Ice Cream bars	37,000	3.2	200	--	Completed 12/84
Island Vineyard	Laurel, N.Y.	Wine, spirits	Expansion	2.8	6	--	Planning 3/85
J							
JAC Creative Foods	Los Angeles, Calif.	Surimi products	36,000	4.0	--	--	Startup 1/85
Jacob Stern & Sons	Houston, Tex.	Vegetable oil	Expansion	2.4	--	--	Startup 4/85
James B. Beam Co.	Clermont, Ky.	Whiskey	--	4.1	--	--	Completed 1/85
Joan of Arc Co.	Turkey, N.C.	Canned vegetables	Expansion	--	32	--	Reported 1/85
Jordan Sausage Co.	Muscogee Cty., Ga.	Sausage	Expansion	--	20	--	Construction 12/84
K							
Kappler Dairy Co.	Medicine Hat, Alb.	Milk	2,000	1.2	10	--	Construction 12/84
Kellogg Co.	Battle Creek, Mich.	Cereal	--	100	--	--	Planning 5/85
Kibun Co.	Raleigh, N.C.	Seafood products	18,000	5.0	60	--	Completed 1/85
Kraft Foods	Bentonville, Ark.	Processed cheese	Expansion	10.0	--	--	Completed 4/85
Kraft Foods	Lawrenceburg, Ky.	Cheese	Expansion	3.0	--	--	Completed 1/85

Circle 51 on Inquiry Card →

NEW FOOD PLANTS



New $5.7 million Smith Dairy Products ice cream and frozen desserts plant at Orrville, Ohio, incorporates high-density, computer-controlled warehouse. Designed and built by DESCORP, the plant started-up in August 1985.

Company	Plant Location	Primary Product	Square Feet/Cap.	Est. Cost ($-Millions)	Employees	Architects Engineers	Status & Date
L							
Lamb-Weston, Inc.	Richland, Wash.	French fries	20,000	5.2	150	--	Reported 1/85
Land O'Lakes	Brookings, S.D.	Cheddar cheese	6,000(Expansion)	--	40	--	Completed 7/84
Land O'Lakes	Clear Lake, Wis.	Puddings, dips	10,000	3.0	--	--	Reported 1/85
Larsen Co.	Fairwater, Wis.	Canned vegetables	25,000(Expansion)	1.7	3	--	Completed 12/84
Lauhoff Grain Co.	Danville, Ill.	Soy & corn processing	100,000(Exp.)	1.5	--	--	Reported 1/85
Lender's Bagel Bkry	Mattoon, Ill.	Bagels	--	10	--	--	Construction 5/85
LePage Bakeries	Lewiston, Maine	Bakery products	Expansion	--	680	--	Construction 1/85
Liberty Meat Pkg.	Liberty, N.Y.	Meat packing	91,000	7.7	32	--	Planning 3/85
Louis Trauth Dairy	Newport, Ky.	Milk, ice cream	Expansion	--	--	Hixson	Completion 1/86
Louisville Edb. Oil	Louisville, Ky.	Vegetable oil, shortening	Expansion	1.7	25	--	Completed 1/85
M							
Made-Rite Sandwich	Chattanooga, Tenn.	Prepackaged sandwiches	--	--	--	--	Reported 1/85
Marshall Durbin	Canton, Miss.	Poultry products	Expansion	3.0	--	--	Construction 8/84
Marshall Durbin	Hattiesburg, Miss.	Poultry products	Expansion	2.0	42	--	Construction 8/84
Mexican Org. Prod.	Fayetteville, Ark.	Mexican foods	Expansion	5.0	200	--	Completed 12/84
Montfort of Colo.	Hastings, Neb.	Processed meats	150,000	9.5	500	--	Completed 11/84
Mrs. Best Maid Prod	Fort Worth, Tex.	Salad dressings	Expansion	4.0	--	--	Planning 4/85
MS Foods Co.	Plainview, Tex.	Frozen Mexican foods	30,000	1.0	20	--	Reported 1/85
N							
National Distillers	Frankfort, Ky.	Whiskey	Expansion	2.0	--	--	Completed 1/85
Nat. Starch & Chem.	N. Kansas City, Mo.	Starch	Expansion	--	200	--	Planning 4/85
Nestle Co.	Granite City, Ill.	Instant tea	Expansion	7.0	25	--	Reported 1/85
Nestle Co.	Burlington, Wis.	Instant drinks, choc. bars	37,000(Exp.)	2.0	100	--	Construction 5/85
New Energy of Ind.	South Bend, Ind.	Ethanol	--	126	150	Davy McKee	Startup 10/84
New England Ethanol	Auburn, Maine	Ethanol	--	1.0	295	--	Planning 1/85
North American Corp	Mirabel, Que.	Bottled water	46,000	10.0	50	--	Construction 1/85
N.C. Processing Co.	Goldsboro, N.C.	Turkey products	--	--	1000	--	Planning 4/85
O							
Owensboro Grain Co.	Owensboro, Ky.	Soybean oil	Expansion	10.0	15	--	Completed 4/85

NEW FOOD PLANTS

Artist's rendering of new $2.2 million ice cream/frozen desserts plant of Associated Dairies at Boise, Idaho, designed and build by DESCORP. Both raw material and finished product storage incorporates rack-supported structure to reduce building costs.

Company	Plant Location	Primary Product	Square Feet/Cap.	Est. Cost ($-Millions)	Employees	Architects Engineers	Status & Date
P							
Packerland Packing	Scotts Bluff, Neb.	Meat packing	200,000	--	135	--	Reported 2/85
Pate Foods Co.	Winnebago, Ill.	Snack foods	200,000	2.0	50	--	Completed 12/84
Pepperidge Farms	Huron Cty., Ohio	Baked goods	--	--	--	--	Reported 12/84
Pepsi-Cola Bottling	Buena Park, Calif.	Beverages	Renovation	--	--	MK-Ferguson	Completion '85
Pepsi-Cola Bottling	Howell, Mich.	Beverages	Renovation	--	--	MK-Ferguson	Completion '86
Pepsi-Cola Bottling	Charlotte, N.C.	Soft drinks	48,000(Expansion)	4.0	--	--	Completed 1/85
Pepsi-Cola Bottling	Atlantic Cty., N.J.	Soft drinks	39,000	1.8	100	--	Construction 2/84
Pepsi-Cola Bottling	Mays Landing, N.J.	Soft drinks	Expansion	--	50	--	Construction 5/85
Pepsi-Cola Bottling	Ashwaubenon, Wis.	Soft drinks	100,000	2.5	--	--	Construction 12/84
Pepsi-Cola Bottling	Queens, N.Y.	Soft drinks	400,000	42	--	--	Construction 4/85
Pepsi-Cola Bottling	Winnebago Cty., Wis.	Soft drinks	--	--	15	--	Completed 12/84
Pepsi-Cola Bottling	College Point, N.Y.	Soft drinks	Expansion	--	164	--	Planning 3/85
Perdue, inc.	Salisbury, Md.	Edible oil products	--	--	--	PSI	Startup 2/85
Pilgrim Industries	DeQueen, Ark.	Processed poultry	Expansion	--	226	--	Completed 12/84
Pizza Ent. of Miami	Afton, Okla.	Frozen pizza	--	1.5	80	--	Planning 4/85
Presto Food Prod.	City of Industry,Cal	Frozen desserts, toppings	--	--	95	--	Construction 7/85
Purity Dairies	Nashville, Tenn.	Milk	Expansion	2.2	--	--	Planning 1/85
Q							
Quail International	Greensboro, N.C.	Quail	--	--	60	--	Completed 1/85
Quaker Oats Co.	Oakland, Calif.	Foods & beverages	--	--	--	MK-Ferguson	Completion '86
Quaker Oats Co.	Jackson, Tenn.	Frozen pancakes, waffles	Expansion	--	--	--	Reported 1/85
Quality Assured	Stockton, Calif.	Canned tomatoes	80,000	5.0	50	--	Construction 2/85
Qual. Candy Shoppes	St. Francis, Wis.	Boxed chocolates	45,000	2.0	50	Siebert Eng.	Completion '86
R							
Rachelli Co.	Saint Laurent, Que.	Ice cream	17,000	1.8	20	--	Completed 1/85
RadiationTechnology	Elizabeth, N.J.	Grain irradiation	2,500 lbs./min.	--	--	--	Completion mid-'86
RadiationTechnology	Salem, N.J.	Grain irradiation	2,500 lbs./min.	--	--	--	Completion late '85
Ragu Foods	Owensboro, Ky.	Spaghetti sauce	Expansion	9.0	--	--	Completion 4/85
Ridgerview Foods	Whitehall, Wis.	Mozzarella cheese	60,000	7.0	50	Pasilac	Startup 9/84
Rogers Foods Co.	Turlock, Calif.	Dehydrated spices	75,000(Expansion)	--	23	--	Completion late '85
Ross Laboratories	Casa Grande, Ariz.	Infant formulas	500,000	--	--	Sverdrup	Startup mid-'85
R. Twining & Co.	Greensboro, N.C.	Bagged tea	55,000(Exp.)	7.5	40	--	Construction 1/85

NEW FOOD PLANTS

Company	Plant Location	Primary Product	Square Feet/Cap.	Est. Cost ($-Millions)	Employees	Architects Engineers	Status & Date
		S					
Salem Coca-Cola	Seabrook, N.H.	Soft drinks	57,000(Expansion)	--	--	--	Completed 3/85
Sanwa Foods	Atlanta, Ga.	Noodles	--	--	140	--	Reported 4/85
Sara Lee Corp.	Chickasaw Cty., Iowa	Bakery products	Expansion	--	220		Completed 12/84
Seaboard Farms	Chattanooga, Tenn.	Broiler chickens	Expansion	--	--	--	Reported 1/85
Sea Farm, Ltd.	Charlotte, N.B.	Salmon processing	--	2.6	7	--	Reported 12/84
Seagram Wine Co.	Monterey, Calif.	Wine	Expansion	20.0	100	--	Reported 4/85
Service Packing Co.	Joplin, Mo.	Meat processing	Expansion	3.0	200	--	Construction 4/85
Seigi Sausage House	Tulsa, Okla.	Sausage	11,000	1.0	30	--	Construction 12/81
Smith Dairy Prod.	Orrville, Ohio	Ice cream	--	5.7	20	DESCORP	Startup 8/85
Southern Belle	Tupelo, Miss.	Pork products	Expansion	4.0	50	--	Completed 1/85
Southern Style Pot.	High Point, N.C.	Potato chips	--	--	60	--	Construction 8/84
Spangler Candy Co.	Bryan, Ohio	Candy	Expansion	--	--	--	Construction 5/85
Specialized Ice Pkg	Orange City, Fla.	Deionized ice cubes	20,000	3.0	100	--	Completed 12/84
Star Kist Canada	Charlotte Cty, N.B.	Fish processing	Expansion	4.2	--	--	Completed 12/84
Stevenson Crab Co.	Windsor, N.C.	Seafood processing	--	--	75	--	Construction 8/84
Stevia Co.	Pueblo, Colo.	Natural sugar substitute	22,000	6.0	100	--	Construction 12/84

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Company	Plant Location	Primary Product	Square Feet/Cap.	Est. Cost ($-Millions)	Employees	Architects Engineers	Status & Date
Stouffer Foods Corp	Provo, Utah	Frozen foods	--	--	--	--	
Stouffer Foods Corp	Springville, Utah	Frozen foods	287,000	75.0	1,200	--	Construction 1/85
Sutrocuco	Wilmington, Del.	Orange- juice concentrate	--	7.0	--	--	Completed 1/85
Swaggerty Sausage	Knoxville, Tenn.	Processed meats	--	--	--	--	Reported 1/85
Swift Ind.Pkg.Corp.	Des Moines, Iowa	Meat Packing	40,000(Exp.)	8.0	150	--	Completed 1/85
T							
Thomas J. Lipton Co	Suffolk, Va.	Instant tea	--	--	--	--	Reported 12/84
Tombstone Pizza	Sussex, Wis.	Frozen pizza	22,000(Exp.)	--	423	--	Construction 12/84
Tyson Foods	Green Forest, Ark.	Poultry products	Expansion	--	300	--	Completed 12/84
W							
Weeks Dairy Foods	Concord, N.H.	Ice cream, milk	35,000(Exp.)	--	20	--	Completed 3/85
Welch Foods	North East, Pa.	Juice products	--	1.0	--	--	Reported 1/85
White Star Packing	Bronx, N.Y.	Processed meats	Expansion	--	25	--	Planning 3/85
Wilson Foods Co.	Marshall, Mo.	Sausage patties	Expansion	1.9	--	--	Construction 4/85
Worlds Finest Choc.	Chicago, Ill.	Chocolate	500,000	--	--	Davy McKee	Construction 6/85
Wyoming Res.& Prod.	Washakie, Wyo.	Meat packing	--	9.5	102	--	Planning 12/84

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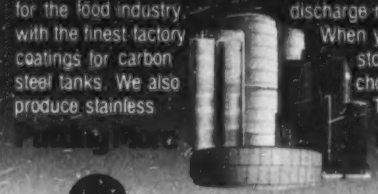

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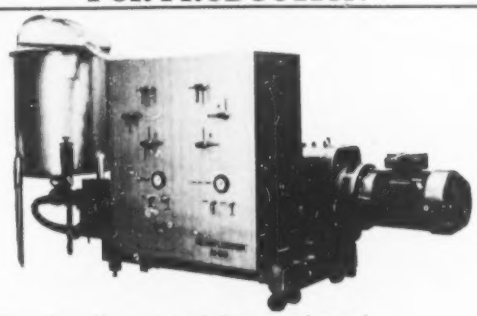

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